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THE FUTURE OF THE OREGON FIBER FLAX INDUSTRY

D. B. DeLoach

Professor of Agricultural Economics, Oregon State College

The price-support program on flax fiber announced by the United States Department of Agriculture on August 27, 1946 opens up a new phase in the history of the Oregon fiber-flax industry. Since practically all of the fiber flax produced commercially in the United States is grown and processed in the Willamette Valley, this means that the government support program is designed primarily to aid Oregon operators during the period of transition from war to peace. The introduction of an artificial system of pricing fiber makes necessary a further consideration of the economic problems of the Oregon fiber-flax industry, which problems have been the subject of discussion in several Oregon State College and United States Department of Agriculture publications.[1]

The price-support program is divided into two parts: (1) that in which the nonprofit-type producer-cooperative processing association can participate, and (2) that in which the profit-type commercial processing plant can participate. Briefly, the program establishes minimum loan values on fiber produced from straw grown in 1946 and in prior years. The Commodity Credit Corporation has been designated as the administrative agency. It is empowered to make nonrecourse loans on warehouse receipts issued on flax fiber stored in approved warehouses as follows:

Grade	*Loan Value per Pound on Fiber Produced from 1945 and Prior Crops** (Cents)	*Loan Value per Pound On Fiber Produced from 1946 Crop†* (Cents)
5x	53	48
4x	53	48
3x	51	46
2x	49	44
1x	47	42

* Available to nonprofit-type processing associations.
† Available to all processing plants.

In addition to the loan rights extended to all processing plants, the nonprofit-type processing associations may select an optional arrangement under which the Commodity Credit Corporation will purchase outright the fiber produced from straw processed from 1945 and prior crops, by grade, at a price 2 cents a pound below the loan values.

Since it ordinarily requires a year or more to process

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[1] W. M. Hurst, *Fiber-Flax Machinery and Processing Operations in Oregon*. U. S. Department of Agriculture Circular No. 667, March 1943. D. D. Hill, F. E. Price, and D. B. DeLoach, *Fiber-Flax—An Appraisal of the Problems and Possibilities*. Oregon State College, June 1946. Edward L. Rada, and D. B. DeLoach, *The Oregon Fiber-Flax Industry*. Oregon State Monographs, Studies in Economics No. 3, July 1942.

THE PRODUCTION POTENTIAL OF WESTERN AGRICULTURE

MARION CLAWSON

Bureau of Agricultural Economics, Berkeley, California

Everyone has seen pictures of a returning soldier trying to wear his prewar clothes—sleeves too short, coat won't button in front, cuffs above the ankles, etc. We suddenly realize that he has *grown*. Western agriculture is just like the returning soldier; it too has *grown*. Gradually, over the years, western agriculture has expanded, and once in a while we wake up to discover that our old ideas about it are wrong. Growth for the soldier requires an expenditure for new clothes; growth for western agriculture isn't entirely painless and free from problems. The real question we are now facing is: Has the growth in western agriculture stopped or will it continue? How much, if any, will western agricultural output increase? What effect will more irrigation have upon agricultural output? What about markets? What effect will the growth of western population have upon markets for western agricultural commodities?

What has been the history of western agriculture? Early settlers in the West began to produce their own food at an early date; with the difficult, costly, and uncertain transportation of those days, they often had to raise what they ate, if they were going to eat. The Spanish in California, the Mormons in Utah, and early settlers in the Northwest all faced this necessity. Commercial agriculture, or production for sale, generally began with the raising of range livestock. Hides, tallow, and wool could be shipped relatively long distances, because they were not perishable and had high value in relation to bulk. With the coming of the railroads, live animals could be shipped eastward. Next in the development of commercial agriculture was ordinarily grain farming. The Central Valley of California, the Palouse and other Northwest areas, and the Great Plains had the greatest expansion in grain farming. Partly contemporaneously but mostly later came the growth of general irrigated farming. The possibilities of fruit production began to be explored at a fairly early period. At first, the markets except for dried fruits, were only local. The introduction and improvement of refrigerated transportation and of canning greatly stimulated fruit production. Of more recent origin has been the great growth in rather specialized dairy production and in highly specialized production of truck crops or vegetables. To these broad changes must be added the introduction and expansion of sugar beets, cotton, and other crops.

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* A paper prepared for delivery at the 1946 Conference on Marketing and Distribution, Oregon State College, Corvallis.

THE PRODUCTION POTENTIAL OF WESTERN AGRICULTURE

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Agricultural production in the West has increased 115 per cent since 1910. In the 1910-14 period, the average annual cash farm income, in terms of 1926 dollars, was slightly over $1 billion for the 11 western states (see table below). By 1939-43, even when measured in 1926 dollars, it had risen to $2.25 billion. The increase in California was nearly twice as rapid as in the rest of the region. While annual cash farm income from all commodities was doubling in the West, the changes in different groups of commodities was by no means uniform. Income from sale of vegetables increased nearly 4 times: "other livestock," which is chiefly dairying and poultry, increased 3 times. On the other hand, income from sale of meat animals rose only 60 per cent and income from "other crops"—wheat, cotton, potatoes, sugar beets, etc. —rose only 72 per cent. These shifts in source of cash farm income clearly indicate a trend toward more intensive types of farm production—dairying instead of beef cattle, vegetables and fruits instead of alfalfa and irrigated general crops, etc.

AVERAGE ANNUAL DEFLATED CASH FARM INCOME, 1910-14 AND 1939-43, IN THE 11 WESTERN STATES, BY SOURCE OF INCOME (IN MILLIONS)

Commodity Group	*1910-14*	*1939-43*	*Percentage increase*
Fruits and nuts	$ 170.2	$ 423.5	149%
Vegetables	71.2	264.5	271
Other crops	310.2	533.0	72
Meat animals	319.3	512.7	61
Other livestock	173.3	516.5	198
Total	$1,044.2	$2,250.2	115%

How do these changes in amount and makeup of cash farm income in the West compare with the changes in acreages of various classes of land during the same period? When the various types of land are converted to a common denominator on the basis of their ability to produce feed for livestock, the increase in productive capacity since 1910 of all types of land has been about 13 per cent. An increase of about 50 per cent in area of irrigated land, plus a slight increase in area of nonirrigated cropland harvested, together with no increase but possibly some decrease in area and productivity of range land, adds up to only a moderate increase of 13 per cent. The increase of over 100 per cent in cash farm income has thus come predominantly from greater and more valuable production per acre. Only a slightly larger area of land has been used more fully, and for more intensive crops, so that total output has risen greatly. The upward trend in the West and particularly on the Pacific Coast greatly exceeds the trend elsewhere in the United States.[1]

Western agricultural commodities are sold on regional (or local) and on national markets. What is the market outlook for western agricultural products?

Much of western agricultural production consists of "specialties"—crops not grown at all elsewhere in the United States, or grown only in limited volume elsewhere. Hops, apricots, pears, filberts, walnuts, olives, figs, avocados, artichokes, and many others could be mentioned in this connection. When consideration is given to the season of production, several other crops for certain seasonal markets fall into this group. For example, though fresh peas are grown widely in the United States, fresh peas for winter market are grown primarily in the West. With only minor exceptions, western production far exceeds western consumption of these specialty commodities. Their chief market is usually in the Midwest and East, 2,000 miles or more from the area of production. Farm prices of these commodities depend on prices received in large eastern cities, minus relatively high freight and marketing costs. Growth in western population means an expanded local market for "specialties," but it does not free producers from dependence on the distant market.

"Common" agricultural commodities are grown in many parts of the United States other than the West. They include not only the staple products such as wheat, corn, oats, barley, cotton, cattle, and hogs, but also such things as apples and canning peas. Obviously, there is no sharp line separating "specialty" from "common" products; if 75 per cent or more of national production is in the West, the commodity is probably a specialty; if 25 per cent or less, it is probably a common one. Intermediately, there may be difference of opinion as to proper classification.

Common commodities may be subdivided into (1) "deficit" commodities, the western production of which is *less* than western consumption; (2) "surplus" commodities, the western production of which clearly *exceeds* western consumption; and (3) "self-sufficient" commodities, for which western production and consumption are in approximate balance. Examples are: deficit commodities, hogs; surplus, potatoes; self-sufficient, dairy products as a group. Because common commodities are produced in large volume elsewhere in the United States, western producers are in competition with producers elsewhere. This is true on both regional and national markets. If western consumption exceeds western production, the difference is easily shipped in. The price to western farmers is the same as the price to midwestern farmers, plus freight and other costs. A growth in western population means more shipments into the region, with little or no increase in price to western producers. If western production exceeds western consumption, the balance is shipped out and competes on eastern markets with production from other areas. The price to western farmers is the eastern city price, less freight and other costs of getting the product there. If population grows in the West, more of the product is consumed in the region and less shipped out, but the price is likely to change but little. Of course, if the population change were very great, a surplus commodity might be converted into a deficit commodity—this has actually happened in the case of eggs in California.

The growth of western population has provided a greatly expanded market for western agricultural products. Population expanded from 4 million in 1900 to

[1] See forthcoming report, *Farm Production in War and Peace*, by Glen T. Barton and Martin R. Cooper, Bureau of Agricultural Economics, mimeographed.

nearly 14 million in 1940, and to about 16 million today. Population growth was rapid all over the region, up to 1920, although not at exactly equal rates in all states. From 1920 to 1940, the *rate* of population growth slowed down in all parts of the region, but was maintained at a far higher level in California than elsewhere. From 1900 to 1920, population in California increased 131 per cent, from 1920 to 1940, 102 per cent or roughly three-fourths of the earlier rate. Only two other western states had a rate of population growth from 1920 to 1940 as much as half of their 1900-1920 rate, and for most states the rate was less than one-third as great. Since 1940, the rate of population growth has been greater in California than elsewhere. As a result of the higher and better-sustained rate of population growth in California, more than half of the people in the West are now in that state. Within California, population growth has been especially rapid in the southern part of the state.

Population growth in the West has affected the market for western agricultural products. Beef cattle from Nevada, Utah, and Arizona once moved eastward; now they move westward. The growth of Los Angeles has been reflected in an ever-widening circle from which beef moves westward rather than eastward; today, a substantial number of cattle from western Texas move to southern California. Western dairy production has increased over one-third in the past 20 years; but western consumption has expanded equally rapidly, so that, with minor exceptions, western dairymen have enjoyed a midwestern butter price *plus* freight.

The outlook is for continued western population growth. A population of about 17 million by 1950 and of about 18.5 million by 1960 is probable for the 11 western states. This will represent increases of about 22 and about 33 per cent, respectively, over 1940. Roughly speaking, the western market for western agricultural commodities will expand proportionately. With the prospect of more rapid population growth in California than in the rest of the region as a whole, the California market will become increasingly important for western agricultural products.

What about the national market? National population growth has been substantial over the past several decades; and further growth will occur, even though it is generally agreed that we are gradually approaching a stationary population. While national population growth has affected the national market for western agricultural commodities, other factors have perhaps been more important. Improved transportation and new processing methods have been very important factors; so have changed dietary standards and food tastes of the population toward more fruits and vegetables in the diet. The West can expect some further growth in demand, because of these factors. At the same time, the possibilities of stiffer competition from other parts of the nation should be recognized. If quick freezing makes peas and other commodities (almost or fully equal in quality to the fresh product) available throughout the year, the price of out-of-season fresh products will decline. Improved transportation and processing always widens the market, and exposes previously sheltered producers to the cold blast of competition.

The area of irrigated land in the West has doubled since 1900; the figures are as follows:

1900	9 million acres
1910	13 million acres
1920	17½ million acres
1930	17½ million acres
1940	18½ million acres

In contrast, the area and productivity of grazing land has not increased and may have decreased since it was first fully used, and changes in area of nonirrigated cropland have been relatively small.

These increases in irrigation helped to make possible the greatly increased agricultural production of the West. The intensive crops are nearly all grown on irrigated land. However, irrigated acreage represents only 2.5 per cent of the total land area of the West and only about one-third of the cropland. But, on the basis of the value of agricultural commodities produced, irrigation is responsible for slightly over half of the total. These relationships vary greatly by states. In Oregon and Washington, there are relatively large acreages of nonirrigated cropland west of the Cascades and large dry-farm wheat-producing areas east of the mountains.

Is there an opportunity for expansion of irrigation in the West? The Bureau of Reclamation says so, and has submitted a large-scale program to Congress.[2] Irrigation of 6.75 million acres of new land plus a supplemental supply of water to 9.5 million acres within 10 or 12 years is held out as a reasonable estimate of maximum development within that period. Actual development will almost surely be less; the necessity of getting appropriations, unavoidable delays in construction, perhaps lack of sufficient settlers with necessary capital or credit, and some lands unsuitable for irrigation within projects will all combine to reduce the acreage that will actually be irrigated. The list of proposed developments contains several large projects and many small ones. The Columbia Basin project will ultimately include about 1 million acres; it could all be irrigated within 10 years, but may take 25 years or more to get into full production. The Mountain Home project in southern Idaho will include over 200,000 acres of new land, and may be among the early large projects. The presently authorized Central Valley project will bring in about 500,000 acres of new land. Ultimate developments in that area will add something like 3 million acres to the total irrigated area; as much as 1 million of this might be in production by 1960. A large project is under consideration in Arizona. Outside the 11 western states, large developments are projected in North Dakota and South Dakota.

Considering all factors, I estimate that new land irrigated and land provided with supplementary water supply will be equal in productivity to about 1 million acres of irrigated land by 1950 and to about 3 million acres by 1960. These amounts, if realized, would equal 5 and 16 per cent, respectively, of the area irrigated in 1940. While

[2] Hearings before the Special Committee on Postwar Economic Policy and Planning, U. S. Senate, 78th Congress, 2nd Session, pursuant to Senate Resolution 102. Part 5, Reclamation, Irrigation and Power Projects, June 6, 1944.

I view these as probable developments, others might estimate other acreages as more probable, and anyone will concede that actual development may be greater or less, depending upon the factors previously enumerated.

The outstanding fact in western agricultural history has been the greatly increased output from an only moderately expanded acreage. As pointed out above, the annual value of agricultural production (in 1926 dollars) in the 11 western states rose from about $1 billion in 1910-14 to about $2.25 billion in 1939-43; at the same time, the acreage of all agricultural land rose from the equivalent of about 47 million acres of irrigated land to the equivalent of about 52.5 million acres of irrigated land. Reduced to a per-acre basis, agricultural production rose from about $21 in 1910 to about $39 in 1940, or an 86 per cent increase in 30 years; the rise was rather consistent, year by year. In California, the increase in production per acre was more marked—from about $58 in 1910 to about $122 in 1940, or an increase of 110 per cent in the same period.

What factors are responsible for these trends? First and foremost, a shift toward more intensive lines of agricultural production—more dairy cattle in relation to beef cattle, more truck crops in relation to hay acreage, more fruit production, and similar changes which employ more people and turn out more product from the same area of cropland. This trend has been particularly noticeable in the better farming areas. Greater mechanization has released land to produce crops for sale which previously had been used to produce feed for workstock. Yields of several crops have increased; for example, greater maturity in fruit trees has resulted in higher fruit yields.

Has this trend toward more output per acre ceased or even slackened off? Not yet; and there is reason to believe that the factors responsible for the trend in the past will continue in the future, though probably not with the same force. If this trend should continue at the past rate, by 1960 western agricultural production would be 50 per cent above 1940 agricultural production, through this one factor alone. About one-fourth of this increase above 1940 has already occurred. I have estimated that by 1960 irrigation development might add 6 per cent to the productive capacity of western land. If this additional factor is taken into account, we get a 60 per cent increase in total agricultural production. This represents a productive potential, but market considerations will determine whether it is fully utilized. Such an increase in production, though large, is possible in view of past trends and current plans for irrigation development. Assuming past trends will be somewhat modified, I should say that the *most probable* increase in total agricultural output in the West will be nearer to 30 or 40 per cent by 1960, compared with 1940. Let me repeat: a substantial part of this has already occurred, during the war.

Will market prospects justify such a production increase? On the basis of anticipated western population growth, the regional market for agricultural products may expand 33 per cent by 1960, compared with 1940. Part of this has also occurred during the war. To this probably can be added some increase due to higher consumption per capita, particularly if employment is high. If the national population increases 15 per cent by 1960, the market for western agricultural products, outside of the western region, should increase about proportionately because of that fact. In addition, per capita consumption, particularly of the fruits, vegetables, and other products that the West ships east, should rise appreciably. Considering these increases in regional and in national markets, the total market for western agricultural commodities is likely to rise by perhaps 25 to 30 per cent by 1960, compared to 1940.

On the face of it, these estimates indicate a somewhat greater increase in output than in markets. A conclusion that surpluses will develop is unwarranted, however, because estimates of this sort can hardly have the precision necessary to detect a surplus of 10 or 15 per cent 15 or 20 years in the future. The conclusion can safely be drawn that both agricultural production in the West and agricultural markets for western products will increase materially (one-fourth or more) in the next 15 years.

There is good reason to believe that the West will continue to have an agricultural production greater than its consumption. Indeed, as one looks at the past, it appears that agricultural output has expanded fully as rapidly as population has grown, and that net outshipments have been an approximately constant proportion of total production for the last 30 or 40 years. They may well continue so. The makeup of outshipments and inshipments has varied, and is likely to continue to change, but the relative balance has been nearly the same.

An expanding output, a growing market, and changes in types of production provide an opportunity and constitute a challenge to the agricultural industry of the West.

THE FUTURE OF THE OREGON FIBER-FLAX INDUSTRY

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a crop of flax, the loan privileges are available through June 30, 1948, on fiber processed from straw grown in 1946 and prior years, which will give each processing plant ample time to work through the 1946 crop. The purchase option applicable to fiber processed from straw grown in 1945 and prior years, available to nonprofit-type processing plants only, runs through December 31, 1947. No provision is made to support the prices of fiber extracted from crops grown after 1946.

It is significant that the government has seen fit to establish a lower support price on fiber produced from the 1946 crop than on fiber produced from crops grown in prior years—especially in view of the probable increase in growing, harvesting, and processing costs during the period that will be required to process the 1946 crop, particularly when the payments or loans are to be made on the basis of the established market grades. The probable reason for this distinction will be discussed later. The growers and processors know that their minimum-price

guarantee does not extend beyond the 1946 crop; they will, therefore, adjust their plantings in 1947 and subsequent years on the basis of open-market prices.

Members of the industry, in requesting governmental support for flax-fiber prices, argued that the government made an implied contract with growers and processors in 1941 that caused them to expand the fiber-flax industry to meet a pressing demand for fiber under war conditions. The War Production Board calculated that 4,500 tons of line fiber annually would be the minimum spinning-mill requirement for 1944, 1945, and 1946. The board urged Oregon growers to develop processing facilities and to plant flax to meet this war need. The Federal loan agencies readily advanced funds for such an expansion. But the anticipated demand never materialized: the demand was not even sufficient to utilize the output of the fourteen processing plants, which never exceeded 2,500 tons of line fiber annually. Inventories piled up in 1944 and 1945, prices dropped below established ceilings, and the processing plants operated below capacity. It was the industry's contention that there was an implied obligation on the part of the government to see that the marketable fiber produced during the war period could be sold at prices sufficiently high to pay for the plants constructed during the war—less any salvage value that may exist under peacetime conditions.

The representatives of the Oregon industry, meeting in Salem on June 7, 1946, agreed unanimously that the industry was interested in government price supports during the reconversion period only. After that the industry would depend on its own resources. This action seems a bit unusual for an agricultural group. It should be remembered, however, that, with the exception of the processing plants[2], the land, labor, and capital employed in fiber-flax growing, harvesting, and processing operations can be largely shifted to other crops, thereby avoiding the continuous drag of trying to maintain a submarginal agricultural activity.

The ability of the industry group to agree on the foregoing points enabled it to prepare and adopt a formal resolution which was submitted to the United States Secretary of Agriculture. The resolution was as follows:

"A. Representatives of the entire fiber-flax industry assembled at a meeting in Salem, Oregon, on June 7, 1946, to consider the economic crisis confronting the industry.

"B. A review of the economic status of the industry disclosed the following:

"1. The fiber-flax industry is among the first of the agricultural industries to feel the full impact of conversion from war to peace.

"2. The industry has suffered from—a. Downward price adjustments. b. Readjustment of buyer grading practices. c. Artificial competition from government-sponsored postwar food production programs to meet its international commitments. d. A decrease in the production of fiber which has disrupted the cropping balance in a large area in Oregon. e. A reduction in the number of employees in the several processing plants when many of our rural communities are in need of maximum year-around employment opportunities for non-farm labor.

"C. The members of the industry are unanimous in the belief that government representatives, in order to increase the production of flax fiber for war purposes, entered into an implied contract with Oregon fiber-flax growers and processors under terms that would bring about a miximum production of fiber during 1944, 1945, and 1946 at established maximum prices as evidenced by copies of attached correspondance from the War Production Board.

"D. The assembled representatives of the Oregon fiber-flax industry are vitally concerned with the future of this industry because of its economic importance to this state. In view of the foregoing considerations this representative group unanimously agreed to the following:

"BE IT RESOLVED That the Oregon fiber-flax industry hereby request a Federal price support of

1. 58 cents for 4x and 5x
2. 56 cents for 3x
3. 54 cents for 2x
4. 52 cents for 1x

for all line fiber now on hand or to be processed from straw now on hand that was produced before the end of World War II hostilities.

"BE IT RESOLVED FURTHER That, due to the fact that approximately two years must elapse between the time of planting the flax and marketing the fiber processed therefrom, the Federal Government assume the responsibility of maintaining not less than the above recommended support prices for a period of time equivalent to the time for which support prices are granted to the basic commodities under the Steagall Amendment."

The government did not grant the industry's request in full. It did, however, establish a support program that will go far toward achieving the industry's goal. The program accomplished two other objectives: (1) recognition of the implied commitment of the government to the industry, even though the government graded its responsibility, as evidenced by the variation in supports to different crop inventories; and (2) establishment of the attitude of present government officials in regard to the continuance of the fiber-flax industry on a wartime scale. This attitude that the industry's capacity was expanded during wartime to meet a wartime demand, and that, in the usual course of events, the processors could not expect to operate these war plants economically under peacetime conditions. This assumption should be examined thoroughly.

[2] At present price levels, at least $200,000 would have to be invested to construct a processing plant capable of processing the flax from 1,000 acres of productive land. For the cooperatives that must build and pay for the plant out of receipts from grower patrons, this means that each acre of flax land requires an investment by someone of $200 in processing facilities.

W. M. Hurst, senior agricultural engineer, United States Department of Agriculture, who worked on the Oregon fiber-flax industry's production and processing problems for a number of years while stationed at the Oregon Agricultural Experiment Station, Corvallis, has given the annual rated capacity of the 14 processing plants operating in 1943 as 32,900 to 37,900 tons of pulled flax. The breakdown, together with certain other pertinent data, is given in the table below:

Mill	Year Constructed	Ownership	Rated Capacity Pulled Flax* (Tons)
Approved Flax Company, Eugene	1940-41	Private	4,000-5,000
Benton County Flax Growers, Junction City	1942	Coop	2,400-3,000
Clackamas Flax Growers Assn., Canby	1936	Coop†	1,600-2,000
Dayton Flax Growers, Dayton	1942	Coop	1,600-2,000
Harrisburg Flax Growers Assn., Harrisburg	1941	Coop	1,600-2,000
Molalla Flax Growers, Canby	1942	Coop	2,400-3,000
Mt. Angel Flax Growers Assn., Mt. Angel	1936	Coop†	2,300-2,900
Northwest Flax Production Co., Eugene	1942	Private	2,400-3,000
Oregon Flax Growers Assn., Springfield	1936	Coop†	1,600-2,000
St. Paul Flax Growers, St. Paul	1941	Coop	1,600-2,000
Santiam Flax Growers, Jefferson	1943	Coop	2,400-3,000
Silverton Flax Processors, Silverton	1941-42	Private	1,600-2,000
State Flax Industry, Salem	1915	State	5,000-6,000
Washington County Flax Growers, Cornelius	1943	Coop	2,400-3,000
Total			32,900-37,900

* Based on 200-250 tons per-year for each 7x16x40 tank or equivalent.
† State-owned land and buildings, but farmers cooperative furnishes machinery and operates plant on lease.

The industry continued to rely on the traditional markets for flax fiber during the war period. This was natural, but it gives rise to specific bargaining limitations during peacetime that are inherent in a commodity market where the bulk of the supply must be sold to one or two large spinning-mill buyers. Since there are numerous sources of supply of flax fiber available to the limited number of American flax-fiber spinners, these spinners turn to the suppliers who offer the best prices, other things being equal. Under present organizational arrangements in the spinning industry, Oregon growers must continue to sell their fiber in a peacetime market entirely dominated by one or two spinning-mill buyers. This is a definite disadvantage to the growers operating their own processing plants.

The Approved Flax Company, the Harrisburg Flax Growers Association, and the Silverton Flax Processors did not operate in the 1946 season. The Approved Flax Company became insolvent and was disposed of in a bankruptcy sale arrangement. The Harrisburg and Silverton companies closed for other reasons; it appears that the failure to obtain adequate supplies of flax straw was the most important. Unless the 1947 acreage of fiber-flax is increased by growers supplying four other processing plants, their operations cannot extend beyond the period required to process the 1946 crop of straw. If this increase does not materialize and seven processing plants are closed permanently, the remaining processing facilities will include only the State Flax Industry (State Prison plant), the three cooperative plants constructed by the state and Federal governments in 1936 and subsequently leased to the cooperatives at a nominal rental, and perhaps two plants constructed since 1941.

In the final analysis, the flax industry in Oregon will continue to operate if the growers receive a net return from growing flax equal to or above that obtained from other crops that can be grown on the same land. In view of the fact that the fiber-flax grower must usually assume the responsibility of growing, harvesting, and processing the straw to obtain a marketable fiber that must be sold in competition with foreign-produced fiber, his problem is twofold: (1) to produce a product with a competitive quality, and (2) to produce a product at a competitive cost. Can this be done? What do members of the industry think?

The responsible leaders of the Oregon fiber-flax industry state that they can produce a competitive quality fiber, provided growers: (1) select better qualiy and improved varieties of seed, (2) adopt cultural practices that will improve the quality of the straw and fiber extracted, (3) adopt handling methods that will assure the delivery of straw to the processing plant in good condition; and provided the processing plants: (1) develop and maintain a trained labor force to handle, sort, and grade the fiber extracted from the straw, (2) segregate the straw received at the plant according to physical characteristics affecting the processing operation, thereby obtaining a greater degree of quality control, (3) develop a retting technique that is sufficiently controlled to insure a uniform retting of the straw, to insure against over- or underretting, and to insure the minimum of discoloration and gum residues, or (4) develop a mechanical method of separating the fiber from the straw, thereby eliminating the necessity of retting.

The same leaders claim the Oregon industry cannot compete on a price basis with foreign producers under prevailing cost conditions in the state unless: (1) the harvesting operations are mechanized to a point where the unit cost of harvesting is decreased materially below that prevailing in European countries; (2) the processing operations are mechanized to a point where the unit cost of extracting the fiber from the straw is decreased to a level competitive with that prevailing in European countries.

The essence of the problem of the Oregon industry is one of competitive efficiency. Because we have been unable to mechanize the flax-processing operation to a point where it offsets the comparatively high wages paid American workers, we have not reached the desired point of competitive efficiency. Therefore we have sought refuge in tariffs and subsidies. Under such conditions, one can legitimately inquire concerning what is being done to correct the apparent cost disparity.

Because of the nature of its organization and operation, the Oregon industry has been occupied almost solely with the job of growing, harvesting, and processing. Funds have not been available for experiment. For this reason the research into ways and means of increasing competitive efficiency has fallen almost entirely to the Oregon Agricultural Experiment Station and the United States Department of Agriculture. The research efforts have yielded substantial results; it is evident, however, that much remains to be done if Oregon growers are to compete effectively with foreign producers. Further progress in the mechanization of the harvesting and processing operations can be anticipated; improvements in the retting techniques should be forthcoming, provided

the research plans of the United States Department of Agriculture are carried through; varietal studies should be extended (a material improvement could be effected by the industry at this time if more attention were given to the selection of a quality seed from existing varieties); and uniform standards for grading fiber can be developed, thereby giving growers an objective quality goal.

Within a very short time Oregon growers must decide once and for all whether they will continue to grow fiber flax. This decision will be affected very greatly by the policy of the government in pricing or supporting the prices on other crops that compete with flax for the use of land, labor, and capital. A return to the low production level that prevailed between 1931 and 1940, when the State Flax Industry plant and three cooperatives produced between 200 and 300 tons of line fiber annually, seems out of the question from an economic standpoint. At that time these plants were supplying somewhere between 5 and 10 per cent of the nation's spinning-mill requirements. The expansion during the war period enabled the industry to develop a capacity capable of supplying at least 70 per cent of the country's spinning-mill needs for line fiber under peacetime conditions. This capacity of the Oregon processing plants was never utilized fully during the war period. If the Oregon industry is to be of interest to spinning-mill operators as a source of supply of flax fiber, it must develop and maintain a substantial tonnage of fiber output each year. The fiber must be of acceptable quality; it must be uniform from year to year; and it must be marketed in a manner to gain the confidence of the mill users.

A solution of the quality and cost problems will enable Oregon growers to compete with other flax-fiber producers; but the rapid development and use of synthetic fibers during the past few years is of particular long-run importance to the fiber-flax industry. The fact that the per capita consumption of flax fiber has been declining steadily since 1920, while the consumption of synthetic fibers has been increasing rapidly, cannot be ignored in future industry planning.

UNIVERSITY OF OREGON STUDIES IN BUSINESS AND ECONOMICS

(These may be obtained from the Bureau of Business Research)

RECENT PUBLICATIONS

BALLAINE, WESLEY C., *Anticipated Postwar Private Employment and Nonpublic Expenditures in Lane County, Oregon.* Aug. 1944. Price: 15 cents.

BALLAINE, WESLEY C., *Outlook for Forest Products Industries in Lane County.* Oct. 1944. Mimeographed.

BALLAINE, WESLEY C., *The Problem of Stable Exchange Rates.* Aug. 1945. Price: 50 cents.

BALLAINE, WESLEY C., *Unemployment Compensation in Oregon: A Survey.* Mar. 1944. Price: 25 cents.

CRUMBAKER, CALVIN, *Transportation and Politics. A Study of the Long-and-Short-Haul Policies of Congress and the Interstate Commerce Commission.* U.O. Monographs. Studies in Economics No. 1. June 1940. Price: $1.25.

DANIEL, EDWARD G., *Federal Finance, Prices and Public Welfare.* May 1944. Price: 25 cents.

DANIEL, EDWARD G., *Financing the Defense Program.* Dec. 1941. Price: 25 cents.

DANIEL, EDWARD G., *Life-Insurance Sales in the Pacific Coast States. 1923-1942.* July 1943. Price: 25 cents.

DANIEL, EDWARD G., *Price Control.* July 1942. Price: 25 cents.

DANIEL, EDWARD G., *A Survey of Consumer Opinion in Regard to the Eugene Retail Grocery Market.* 1942. Mimeographed.

GILBERT, J. H., *Tax Systems of Australasia.* U.O. Monographs, Studies in Economics No. 2. Mar. 1943. Price: $1.25.

MASTERTON, IVER WILLIS, *A History of Consumer's Cooperatives in Oregon Prior to 1900.* U.O. Thesis Series No. 8. June 1938. Mimeographed. Price: 25 cents.

EARLIER PUBLICATIONS

(No charge for the following publications)

BURRELL, O. K., *The Behavior of Bond Prices in Major Business Cycles.* U.O. Pub., Business Administration Series, v. II, n. 6. May 1932.

BURRELL, O. K., *Financial and Operating Standards for Oregon Retail Concerns.* U.O. Pub., Business Administration Series, v. I, n. 2. Oct. 1929.

BURRELL, O. K., *Forecasting Fluctuations in Demand for Douglas Fir Lumber.* U.O. Pub., Business Administration Series, v. II, n. 2. Jan. 1931.

BURRELL, O. K., *An Industrial Audit of Oregon.* U.O. Pub., Business Administration Series, v. I, n. 6. July 1930.

BURRELL, O. K., *The Operating Costs of Master Plumbers in 1929.* May 1930. Mimeographed.

Columbia River Valley Traffic Survey. U.O. Pub., Business Administration Series, v. II, n. 3. Mar. 1931.

FOWLER, WILLIAM A., *Portland's Share in Export Traffic from North Central United States to Trans-Pacific Markets.* U.O. Pub., Business Adminisration Series, v. I, n. 7. Aug. 1930.

FOWLER, WILLIAM A. (assisted by RONALD H. ROBNETT), *Oregon Hardwood Industries.* U.O. Pub., Business Administration Series, v. I, n. 4. Dec. 1929.

HAWKINS, HARRY C. (assisted by LOWELL ANGELL), *Survey of Foreign Trade Activities of Oregon Manufacturers.* U.O. Pub., Business Administration Series, v. II, n. 4. June 1931.

Import Traffic Through Atlantic and Gulf Ports of Selected Far Eastern Commodities. July 1928. Mimeographed.

LOMAX, ALFRED L., *The Facilities, Commerce and Resources of Oregon's Coast Ports.* U.O. Pub., Business Administration Series, v. II, n. 7. June 1932.

LOMAX, ALFRED L. and VAN GUILDER, THEODORE N., *Marketing and Manufacturing Factors in Oregon's Flax Industry.* U.O. Pub., Business Administration Series, v. II, n. 1. Dec. 1930.

LOMAX, ALFRED L. and VAN GUILDER, THEODORE N., *Oregon's Exportable Surplus.* U.O. Pub., Business Administration Series, v. I, n. 5. Mar. 1930.

CURRENT BUSINESS TRENDS IN OREGON

BANK DEBITS

Bank debits represent the dollar value of the checks drawn against individual bank deposits. Approximately 90 per cent of all goods, property, and services is paid for by check. Bank debits are regarded as indicators of the general trend of business, though their value for this purpose may be impaired by substantial changes in the general level of prices. The Bureau of Business Research collects bank debits from 92 banks and branches monthly. On occasion, the totals for the same month in different issues of the *Review* are not directly comparable because of necessary adjustments in basic data.

Marketing Districts	*Number of Banks Reporting*	*Debits Oct. 1946*	*Debits Sept. 1946*	*Debits Oct. 1945*	*Oct. 1946 compared with Sept. 1946*	*Oct. 1946 compared with Oct. 1945*
Oregon	85	$874,796,791	$819,688,041	$656,616,442	+ 6.7%	+33.2%
Portland (Portland, Hillsboro, Oregon City, etc.)	25	$58,139,985	513,511,030	431,511,764	+ 8.7	+29.3
Lower Willamette Valley (Salem, McMinnville, etc.)	9	75,126,302	67,791,204	54,880,135	+10.8	+36.9
Upper Willamette Valley (Albany, Corvallis, Eugene, etc.)	9	65,024,042	73,163,805	44,367,017	−11.1	+46.6
North Oregon Coast (Astoria, Tillamook, etc.)	5	19,727,202	21,401,936	15,396,663	− 7.9	+28.1
Douglas, Coos Bay	4	16,384,668	15,656,690	9,094,738	+ 4.6	+80.2
Southern Oregon (Ashland, Medford, Grants Pass)	5	38,237,731	32,231,781	27,935,043	+18.6	+36.9
Upper Columbia River (The Dalles, Hood River, etc.)	6	18,472,684	16,436,445	14,633,821	+12.4	+26.2
Pendleton area	6	17,916,241	20,031,243	13,270,369	−10.6	+35.0
Central Oregon (Bend, Prineville, Redmond)	3	9,327,297	8,097,514	6,709,559	+15.2	+39.0
Klamath Falls, Lakeview area	4	28,992,798	27,167,786	20,803,085	+ 6.7	+39.4
Baker, La Grande area	6	17,404,337	16,258,635	11,493,952	+ 7.0	+51.4
Burns, Ontario, Nyssa	3	10,043,304	7,939,972	6,520,296	+26.5	+54.0

RETAIL SALES

The sales of a state-wide sample of 438 independent retail stores, collected by the Bureau of the Census, give an indication of trading activity and retail distribution. These figures are often interpreted as indicating purchasing power.

BY MARKETING DISTRICT

	Oct. 1946 compared with Sept. 1946	*Oct. 1946 compared with Oct. 1945*
Oregon	+ 7.0%	+25.5%
Portland	+ 6.8	+24.6
Lower Willamette Valley	+ 7.1	+51.6
Upper Willamette Valley	+ 4.3	+32.7
North Oregon Coast	− 0.2	+60.8
Douglas, Coos Bay	− 3.8	+21.4
Southern Oregon	+ 6.5	+12.7
Upper Columbia River	+ 8.3	+46.7
Pendleton	−15.0	+33.0
Central Oregon	+16.0	+40.2
Klamath Falls, Lakeview	+16.3	+39.8
Baker, La Grande	+19.6	+46.8
Burns, Ontario	+21.2	+58.7

BY TYPE OF OUTLET

	Oct. 1946 compared with Sept. 1946	*Oct. 1946 compared with Oct. 1945*
Oregon	+ 7.0%	+25.5%
Department stores	+ 7.4	+23.3
Food stores	+10.2	+21.1
Eating and drinking establishments	+ 0.7	− 1.3
Drug stores	− 2.0	+ 2.1
Apparel stores	− 0.1	− 7.3
Motor vehicle dealers	+14.3	+180.2
Furniture, household, radio	+ 6.7	+60.0
Lumber, building, hardware	+ 8.8	+38.9

BUILDING PERMITS

Building permits give an indication of building operations planned rather than actual construction under way. Care must be taken, in interpreting these data, to allow for the lag which may elapse between the issuance of the permit and the beginning of actual construction. The data have been collected by the Bureau of Business Research.

	New Residential Oct. 1946	*New Nonresidential Oct. 1946*	*Additions, Alterations & Repairs Oct. 1946*	*Totals Oct. 1946*	*Totals Sept. 1946*	*Totals Oct. 1945*
Albany	$ 27,400	$	$	$ 27,400	$ 18,950	$ 38,713
Astoria	13,400	800	12,000	26,200	19,965	125,832
Bend	18,600	1,400	5,500	25,500	43,475	26,990
Coos Bay	34,500	1,000	2,800	38,300	16,000	6,500
Corvallis	8,000	279,850	16,225	304,075	107,100	14,680
Eugene	80,700	5,140	65,664	151,504	109,811	127,670
Grants Pass	48,000	11,725	7,629	67,354	107,510	33,517
Klamath Falls	21,000	21,080	38,508	80,588	124,794	183,950
La Grande	7,750	1,500	2,500	11,750	19,150	31,455
Medford	63,500	36,380	17,150	117,030	50,933	50,078
Oregon City	5,500	8,700	7,800	22,000	39,270	6,700
Pendleton	22,500	250	1,800	24,550	14,700	30,540
Portland	669,700	1,888,455	550,175	3,108,330	1,779,785	1,671,610
Salem	56,200	11,611	24,769	92,580	132,244	237,745
The Dalles	15,000	1,620	6,825	23,445	17,505	20,925
17 other communities	266,275	90,175	35,863	392,313	411,658	419,465
Total	$1,358,025	$2,359,686	$ 795,208	$4,512,919	$3,012,850	$3,031,370

MANUFACTURING EMPLOYMENT

(Source: San Francisco Regional Office, Bureau of Labor Statistics)

Industry	*Sept. 1946*	*Aug. 1946*	*Sept. 1945*
All manufacturing, total	128,800	127,600	142,300
Lumber & timber basic products	59,100	61,000	46,500
Furniture & finished lumber products	6,500	6,600	5,200
Iron, steel products	4,600	4,300	3,700
Transportation equipment	4,500	5,400	33,800
Machinery, except electrical	2,900	2,900	3,000
All other durable goods	3,800	3,900	3,200
Total, durable goods	81,400	84,100	95,400
Food & kindred products	29,100	25,400	31,700
Textile-mill products	3,700	3,600	2,600
Apparel & other finished fabrics	2,500	2,500	1,900
Paper & allied products	4,600	4,700	4,000
Printing & publishing	4,400	4,300	3,900
Total, nondurable goods	47,400	43,500	46,900

PORTLAND FOOD PRICE INDEX

October 15, 1946

(Source: San Francisco Regional Office, Bureau of Labor Statistics)

Food prices declined 0.4 per cent over the month, as meat prices dropped 6 per cent. Declines in meat prices represent variations from August prices; supplies of meats were insufficient to allow computation of September indexes. Although prices of beef and veal were 15 per cent lower than they were in August, they were higher than ceiling prices in effect until October 15. Almost entirely offsetting these declines were higher prices for dairy products (up 11 per cent), sugar (up 12 per cent), and eggs (up 3 per cent). Index readings for the base period, the date closest to the attack on Pearl Harbor, and the end of hostilities are shown below for comparison.

1935-1939 Average	*Dec. 15, 1941*	*Aug. 15, 1944*	*Oct. 15, 1946*
100.00	121.3	150.9	183.7